

Stranded to*

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The problem I will be examining in this brief paper is located in the intersection of two larger problem areas, both having to do with what Selkirk 1972 has characterized as 'dependents of a head', words which are phonologically attached to and syntactically subordinate to neighboring material from some open syntactic category. For brevity, I will refer to such words as leaners. Among the leaners in English are articles, prepositions, coordinating conjunctions, auxiliaries, and complementizers.

The first problem area concerns the distinction between an obligatory leaner, which cannot occur without a member of the category on which it depends, and an optional leaner, which can. In English the articles (1) and the coordinating conjunctions (2) are obligatory leaners, while the prepositions (3) and the auxiliaries (4) are optional leaners:

- (1) *Wilma said she was pointing at a lion, but I couldn't see the (at all).
- (2) *It was Susan that I saw Terry and (in London).
- (3) It was Wystan I sent the poem to (last week).
- (4) Margaret thinks Norman is a genius, but I don't think he is (at all).

The second area concerns the principles of attachment for leaners, in particular the principles governing in which direction a leaner attaches to other material in its sentence. In English articles, (5) coordinating conjunctions, (6) and prepositions (7) always attach to following material, while auxiliaries (8) sometimes attach to following material, sometimes to preceding material (in these examples, square brackets indicate phrasing):

- (5) I saw [the lion].
- (6) I saw Terry [and Susan].
- (7) I sent the poems [to Wystan].
- (8) a. ['S he] going?
b. [He's] going?

Principles of attachment must also specify whether a leaner is clitic or not, that is, whether it forms a phonological word with its supporting material, or whether it merely forms a phonological phrase with it. In what follows I will discuss phonological phrasing only, without making any claims about cliticization--and indeed in many cases such claims would be too strong.

I turn now to the behavior of the English complementizer to as a learner. Examples (9)-(13) illustrate the fact that to is an obligatory learner; it is unacceptable when it is stranded as the only morpheme left in certain constituents.

- (9) Children really shouldn't play with rifles, since
- | | | |
|------------------------------|---|------------------------------|
| a. to do so | } | can be incredibly dangerous. |
| b. *to | | |
| c. for them to do so | | |
| d. ?for them to ¹ | | |

- (10) It's not easy to justify your attitudes, and
- | | | |
|-----------------------------|---|-----------------------------------------|
| a. to justify them | } | you would have to do some fast talking. |
| b. to do so | | |
| c. *to | | |
| d. in order to justify them | | |
| e. in order to do so | | |
| f. in order to | | |

- (11) You should print a letter of retraction, though I doubt that
- | | | |
|---------------------------|---|-------|
| a. to print such a letter | } | would |
| b. to do so | | |
| c. *to | | |

actually placate Jerry.

- (12) If you want to finish your thesis, then
- | | | |
|--------------|---|-------------------------------------|
| a. to finish | } | you're going to have to write fast. |
| b. to do so | | |
| c. *to | | |

- (13) Children really should learn to use rifles, since
- | | | |
|--------------------------|---|-----------------------------|
| a. not to do so | } | can leave them defenseless. |
| b. not to | | |
| c. for them not to do so | | |
| d. for them not to | | |

I should point out here that the unacceptability of to in these examples does not depend on the stress assigned to it: the complementizer may be completely unstressed and reduced to [tə], unstressed but pronounced [tu], or contrastively stressed--all are unacceptable.

Contrastively stressed to is unacceptable for reasons described in Zwicky and Levin (to appear 1980), while the ungrammaticality of [tə] in the examples above presumably follows from the ungrammaticality of [tu] there, in combination with the rather complex conditions on the reduction of [tu] to [tə] that apply in English (certainly the problem is not that a reduced form appears in subject position, since reduced he [i] and you [yə] appear there). Consequently, it is the case of to not bearing special stress that I want to focus on here.

Now compare to with the obligatory learners in (1) and (2) above. Though articles and coordinating conjunctions need a constituent to

lean on, the unacceptability of (1) and (2) can be explained as resulting from conditions on particular transformations, general constraints on transformations, or general constraints on surface structures. For to, however, no such account presents itself: it seems necessary to state directly that to must attach to some constituent, either to its left or to its right, to form a phonological phrase with it. Thus, the contrast between (9b) and (13b) has to do with the existence of a preceding not in (13b) for to to attach to. Similarly in (9d), for them is available for to to attach to, and in (10f), in order. In the remaining grammatical cases, to attaches to a following VP--do so, justify them, print such a letter, or finish.

I will assume that the following are typical phonological phrasings in (9)-(13):

- | | | | |
|------|----|---------------------------------|-------|
| (14) | a. | [in order to] [to justify them] | (10d) |
| | b. | [in order to] | (10f) |
| | c. | [not] [to do so] | (13d) |
| | d. | [not to] | (13b) |

If these are approximately correct, then the main principle of attachment for to is

Right Attachment: to attaches to the constituent on its right, if possible; otherwise to the constituent on its left; otherwise the structure is unacceptable.

(The sense of 'the constituent on the right/left' of some given constituent can easily be made precise; see the appendix.)

The problem now is to characterize when to is blocked from attachment, in one or both directions.

First, look at attachment to the right. The examples so far show that to as a remnant of a subject complement won't attach to a following VP ((9b), (9d), (11c), (13b), (13d)), though of course to in a predicate will attach to a following VP. Also, to as a remnant of a sentence-initial reason clause won't attach to the subject NP of the S that follows ((10c), (10f), (12c)). These observations suggest that the possibilities for attachment to the right are quite limited--limited, in fact, to attachment of to to a following constituent in the S of its origin (more on 'the S of its origin' below).

Now for attachment to the left. This is blocked when to is sentence-initial, in which case it fails to attach to a preceding subordinate conjunction (since in (9) and (13), then in (12)), or a coordinate conjunction (and in (10)), or a complementizer (that in (11)). These preceding constituents do not belong to the S in which to originated; they are,

indeed, all more than one original S away from to. The significance of this structural distance to leftward attachment is clear when we compare the unacceptable cases of stranded to in (10c) and (12c), in reason constructions, with acceptable paraphrases where the reason constructions are sentence final:

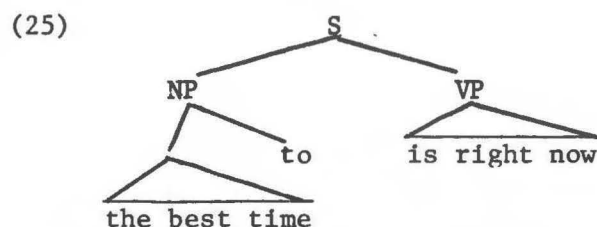
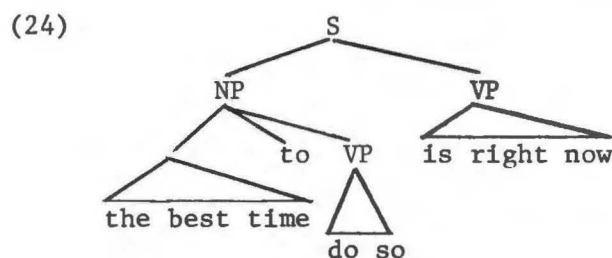
- (15) It's not easy to justify your attitudes, and you
would have to do some fast talking $\left\{ \begin{array}{l} \text{to do so} \\ \text{to} \end{array} \right\}$.
- (16) If you want to finish your thesis, then you're going
to have to write fast $\left\{ \begin{array}{l} \text{to do so} \\ \text{to} \end{array} \right\}$.

Also grammatical are cases of to as the remnant of object complements, as in (17)-(21) below; in nominalizations involving such complements, as in (22); and in infinitival relative clauses, as in (23).

- (17) We needed someone to buy the present, so we
persuaded Paul $\left\{ \begin{array}{l} \text{to do it} \\ \text{to} \end{array} \right\}$.
- (18) We hope that someone will get a perfect grade. In
fact, we expect Tanya $\left\{ \begin{array}{l} \text{to do so} \\ \text{to} \end{array} \right\}$.
- (19) I've been told to act less flamboyantly, but I don't
intend $\left\{ \begin{array}{l} \text{to do so} \\ \text{to} \end{array} \right\}$.
- (20) After some effort on our part to find someone to buy
the present Paul was persuaded $\left\{ \begin{array}{l} \text{to do it} \\ \text{to} \end{array} \right\}$.
- (21) No one wanted to obey the hijackers, but after they
shot one of the passengers, the rest knew $\left\{ \begin{array}{l} \text{to do} \\ \text{so} \\ \text{to} \end{array} \right\}$.
- (22) Gary has always had a compulsion to boast about his
sexual prowess, but I simply can't understand his
need $\left\{ \begin{array}{l} \text{to do so} \\ \text{to} \end{array} \right\}$.
- (23) Willie plans to disrupt the syntax sessions. He
thinks that the best time $\left\{ \begin{array}{l} \text{to do it} \\ \text{to} \end{array} \right\}$ is right
before lunch.

All of these examples support the position that leftward attachment of to is blocked only when the constituent preceding to is two (or more) original S's away from to.

The description I have come to is that to attaches to the right if possible, otherwise to the left, otherwise the structure is unacceptable. And that attachment to the right is possible only within an original S, while attachment to the left may move one original S away but no further. The core of my description may seem to be nothing more than Chomsky's Subjacency Condition (Chomsky 1973)--roughly, no movement more than one S away--plus Ross' Right Roof Constraint (Ross 1967: discussed in ch. 5 under the heading of upward bounding)--no rightward movement out of an S. However, these conditions/constraints apply to the effects of syntactic transformations, whereas what I am considering here are principles of phonological phrasing, which concern the grouping of elements of surface structure and which don't necessarily correspond to any defensible transformations.² Note that the principles of attachment as I have stated them refer to original clause membership--or, we might say, to notional clause membership--not to surface arrangements. This facet of their operation can be illustrated by a simple example: consider the relevant substructure of (23), first without VP Deletion and then with it:



In (24), the Right Attachment principle prescribes the phrasing of to with the following constituent do so if that is possible; since do so belongs to the same original S as to, this phrasing is possible. In (25), the Right Attachment principle prescribes the phrasing of to with the following constituent is right now if that is possible. But is right now does not belong to the same original S as to (though they belong to the same surface S), and attachment to the right is blocked. The constituent to the left of to, the best time, doesn't belong to the same original S as to, but it is only one original S away, so that left attachment is possible.

My analysis immediately gives rise to a series of questions about the reasons for the existence of the principles at issue: Why

are certain words obligatory leaners and others not? Why should attachment sometimes work in one direction, sometimes in the other? Why should original, or notional, clause membership play a role? I have as yet no fully satisfying answers to these questions, but I hope to have piqued the reader's interest in the matter.

Footnotes

*A version of this paper was presented at the 1979 annual meeting of the Linguistic Society of America at Los Angeles. I am indebted to Nancy Levin, Ellen Kaisse, and Geoffrey Pullum for their many helpful comments and criticisms.

¹This example is much more acceptable with stressed them than with unstressed (anaphoric) them, which is itself a leaner. In general, leaners are disinclined to attach to other leaners.

²Indeed the 'original' structures referred to in my principles might well not correspond to multiclausal structures in many analysts' accounts of English; this is particularly true of subject-less subject complements, as in examples like (10c) versus (15).

References

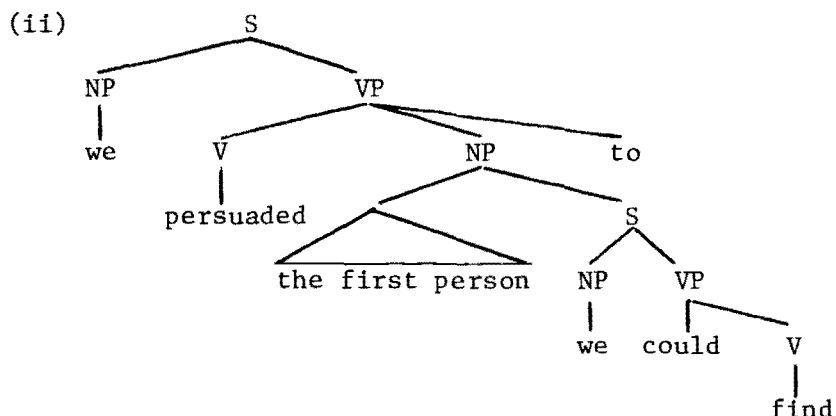
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Appendix

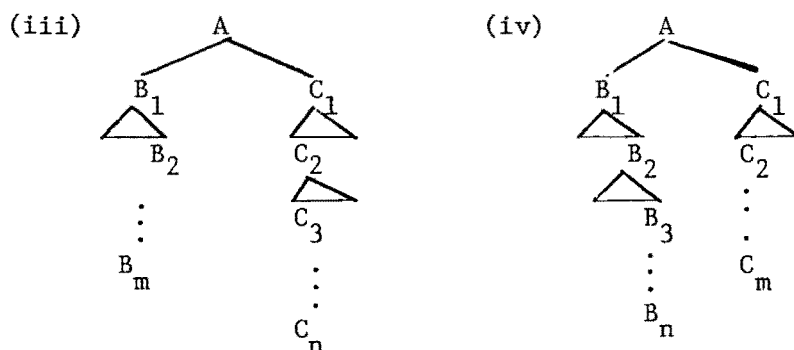
If the principle of Right Attachment is to be useably precise, the sense of 'the constituent on the right/left' of some given constituent must be clarified. The problem arises in cases like the following (compare example (17) in the main text):

- (i) We needed someone to buy the present, so we persuaded the first person we could find to.

The relevant substructure for (i) is roughly:



There is no constituent to the right of to. But what is the constituent to the left of to: the V find, the VP could find, the S we could find, or the NP the first person we could find? The problem arises in general for structures of the forms (iii) or (iv):



(for $n \geq 2$). In (iii), which of the various C_i ($1 \leq i \leq n$) is the constituent to the right of a B_j ($1 \leq j \leq m$)? In (iv), which of the various B_i ($1 \leq i \leq n$) is the constituent to the left of a C_j ($1 \leq j \leq m$)?

If we choose the lowest constituent--the V find in (ii), C_n in (iii), B_n in (iv)--then in each case we are choosing the following/preceding word as the constituent to which to is attached and making the claim that to is clitic to this word. But in (ii), and in many other cases, this claim is overstrong; to does not show the reduction

to [tə] that would go along with its being clitic:

- (v) *We needed someone to buy the present, so we
 persuaded { Paul
 the first person we could find } [tə].

As for the intermediate constituents in structures like (iii) and (iv), there is no principled basis for choosing one of them over another. Indeed, the weakest claims about attachment would be made by choosing the highest constituent--the first person we could find in (ii), C_1 in (iii), B_1 in (iv). For any node in a tree, there is a unique such highest constituent (if there is any material at all to the right/left of that node).